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STUDY OF BLOOD PRESSURE IN INSANE PATIENTS AGED SIXTY AND OVER.*

BY E. T. GIBSON, M.D., MIDDLETOWN, CONN.,
AND
A. M. KIMBERLY, A.B., NEW YORK.

THE observations of blood pressure recorded in this paper were made primarily to obtain standard values with which routine blood pressure determinations in patients aged 60 or over, at the Connecticut Hospital for Insane, could be compared. In addition to the obvious application to kidney, heart and blood-vessel disease, we wished also to measure the differences in arterial tension, according to sex, psychiatric diagnosis and the result of the Wassmann reaction. Finally, since the patients in this series had lived from a few weeks to 40 years in the hospital, the opportunity seemed a good one to find out how varying periods of residence in the regular and non-competitive life of the institution might affect the blood pressure.

Cases were chosen from an alphabetical card index with the conditions that the age should be 60 or over, and that the subjects should be up and about. The pressures were taken at least two hours after meals by means of a mercury manometer, using the auscultatory method. At the same sitting the heart was examined by percussion and auscultation, the rate was observed and a general survey made for evidence of cardiac incompetence. The urine was examined as nearly as possible at the same time. Finally the history of each case was carefully reviewed for evidence of cardio-renal disease.

One hundred and sixty-three cases were found complete enough for use, eighty-two males and eighty-one females.

Blood pressures are expressed always in the following order, diastolic, systolic and pulse pressure.

Men.—Diastolic pressures are about the same for all men over 60, regardless of age. Systolic pressures and consequently pulse pressures are higher in the older men, the average readings increasing about ten units for each five years of age, up to 75 years.

Women.—Women whose age lies between 60 and 74 have all about the same diastolic pressure, which is approximately seven units higher than in men of the same age. In women aged 75 and more, of whom there are 20, the diastolic pressure is somewhat lower than in younger women. Systolic pressures in women under 70 were from 11 to 14 units higher than

* Read before the Central Medical Association, Middletown, Conn., November 12, 1917.

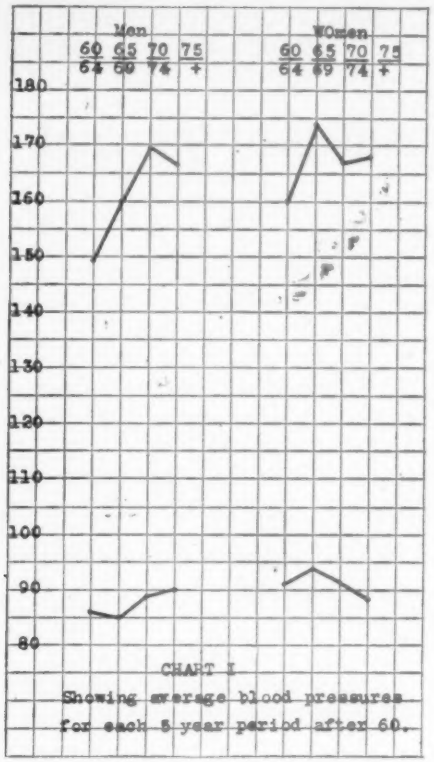

CHART I
Showing average blood pressures for each 5 year period after 60.

Relation of Blood Pressure to Age. (Chart I.)

in men of equal age. After 70 systolic pressures were the same in both sexes. In all women 65 and older the pulse pressures are about the same. They average about 10 units less in women from 60 to 64.

The averages of all the pressure readings are:

Men	87	160	73
Women	91	167	76

Relation of Blood Pressure to Cardio-Renal Disease.

Evidence of cardiac or renal disease was found in 46 of the men and in 41 of the women, that is in about one-half. Albumen and casts without apparent heart involvement were found in only 15 of each sex.

In the whole group of cardio-renal cases, the blood pressure averages were:

Men	87	161	74
Women	91	167	76

These are almost precisely the same as the averages for the entire group.

Relation of Blood Pressure to Wassermann Reaction.

The blood sera of 38 of the women and 68 of the men were tested by the Wassermann reaction. Of these four women (11%) and fifteen men (22%) reacted positively. The average pressures of the men were:

Negative W. R.	83	157	74
Positive W. R.	86	152	66

The positive reactions in women were too few to be significant.

Relation of Blood Pressure to Mental Diagnosis. (Table 1.)

The only groups which contained cases enough to establish fair averages were dementia praecox, the manic depressive psychoses and senile dementia.

The values for dementia praecox in men and women are the same as the values for all the men and women.

In the senile groups the pressures are:

Men	94	168	74
Women	97	178	81

The tendency to higher blood pressure in women past 60 is shown in both these groups. In the manic-depressive disorders, on the contrary, the diastolic pressure is greater in women and the systolic is about equal in both sexes.

Men	83	159	76
Women	88	157	69

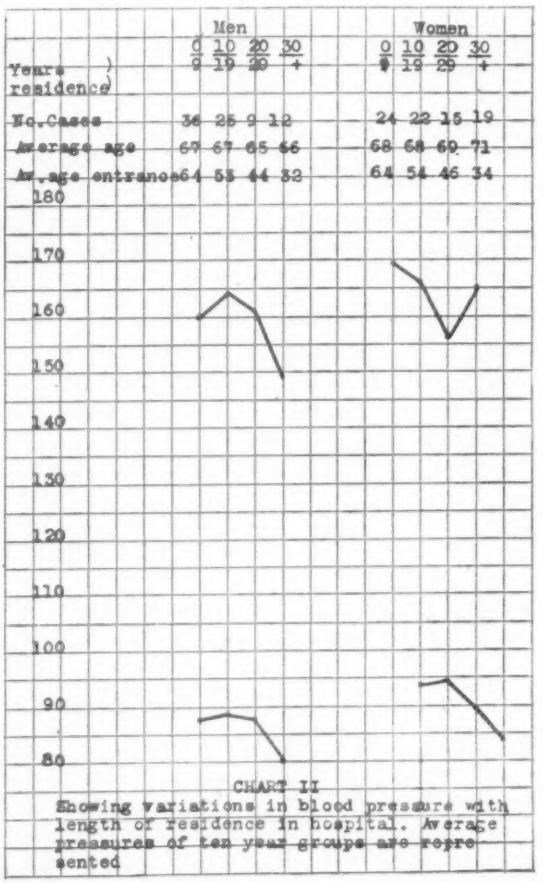

CHART II
Showing variations in blood pressure with length of residence in hospital. Average pressures of ten year groups are represented

Relation of Blood Pressure to Time in Hospital. (Chart II.)

According to current views of the causes of high pressure, some of the continuous factors are worry, alcoholism, over-eating, emotional stress, physical overwork, etc. The conditions of life in a hospital for mental disorders are such that most of these factors are reduced to a minimum. Chart II has been constructed to show how length of stay in the hospital may modify blood pressure. We find that in men who have been in the hospital more than 30 years, the systolic pressure is 12 or 13 units lower than in those whose length of stay is less than 30 years, although the average ages of the two groups are about the same. The diastolic pressure is less in about the same proportion. In other words, men who have been in the hospital since their 32nd year tend to have lower blood pressure at 66 than those who have passed a greater portion of their lives outside. The causes which produce the increased pressure operate in the decade following 32, since, as Chart II shows, the pressure does not increase by steps as length of residence decreases, but at once reaches its maximum, so that those who enter between their 32nd and 44th years (residence 20 to 29 years) have as high a pressure at 66 as those who are not admitted until old age. Similar relations prevail with regard to diastolic pressures in men.

Women who have been in residence 20 years or more have a lower diastolic blood pressure than the more recent admissions, or conversely, women who enter the hospital before their 46th year tend to maintain a lower pressure than those who enter after this year. Our conclusions with regard to women are drawn from the diastolic pressures, since these give more information concerning the permanent condition of the cardio-vascular system. Systolic pressures for women, in contrast to those for men, do not show any close relation to diastolic pressures.

High Pressure.

Of the 82 men, 18 or 22% had systolic pressures greater than 180 millimeters of mercury. Twelve of these had evidence of heart disease and thirteen had albumen or casts or both in the urine. One only was free from evidence of both heart and kidney disease and eight had both.

Of the 81 women, 26 or 32% had systolic pressures greater than 180 m.m. Eleven gave evidence of heart lesions and seven had abnormal constituents in the urine. Eleven of these women were free from evidence of both heart and kidney lesions, and three of them showed both.

The differences between men and women with regard to high pressure and its accompaniments are made clearer by a table.

		Age	No. with Pressure Over 180	Per Cent.	With Heart Lesions	Kidney Lesions	Both	Neither
Men	82	68	18	22	12	13	8	1
Women	81	69	26	32	11	7	3	11

Comparison of the sexes with respect to high systolic pressures shows that women with pressures of 180 m.m. and more outnumber men in the proportion of 32 to 22, but that there was evidence of heart and kidney disease in all except one of the men but in only two-thirds of the women. The average ages of the men and women in this group were about the same.

SUMMARY.

Diastolic pressures in both sexes vary little after 60. In men systolic pressures increase about 10 millimeters of mercury for each five years up to 75. Systolic pressures in women increase abruptly in the years from 65 to 69. In older women the pressure is less and does not vary with age. Both diastolic and systolic pressures are distinctly higher in women.

About half of both men and women had evidence of cardio-renal disease. Blood pressures average the same in this group as in all the men and women. Blood pressures in men average the same in those with positive Wassermann reaction as in those with negative Wassermann reaction.

The blood pressure is not affected significantly by the psychiatric diagnosis, except in senile dementia, in which the averages for both sexes are higher.

Chart II apparently shows that the development of high arterial pressure after 60 is furthered greatly by factors which do not operate in the sheltered life of the institution and that these factors are effective as early as the 32nd year in men, but not until the 46th year in women.

One-third of the women and one-fifth of the men have systolic blood pressures over 180 m.m. Evidence of heart and kidney disease

was found in all but one of these men but in only two-thirds of the women.

TABLE I.

COMPARATIVE TABLE OF BLOOD PRESSURE BY DIAGNOSIS, MEN AND WOMEN SEPARATELY.

	Men				Women			
	No. Cases	D.	S.	P.P.	No. Cases	D.	S.	P.P.
Dementia praecox	29	87	159	72	40	90	168	78
Paranoic condition, etc.	3	81	166	85	4	88	158	70
Epilepsy	5	87	149	62	1	115	232	117
Imbecility	7	89	142	62	2	98	154	56
Manic-depressive	15	83	159	76	18	88	157	69
Alcoholic	9	87	166	79	3	83	170	87
Senile dementia	4	94	168	74	11	97	178	81
Cerebral arteriosclerosis	1	86	168	82	1	98	196	98
Unclassified	2	92	170	78	1	88	158	70

EXTRACT FROM REPORT OF HOSPITAL FOR CONVALESCENTS.

BY WILLIAM H. DEVINE, M.D., BOSTON.

THIS hospital was established for the care of convalescents from influenza, and was organized at St. John's Seminary, Brighton, Mass.

As only one building was devoted to hospital purposes, it was not deemed advisable to admit young children, for fear of contagious diseases, and lack of facilities for isolating. After the first week, an isolation hospital (tents) was erected, and the management then felt that it was safe to admit them. Fortunately, this isolation hospital was not needed.

The hospital was opened October 6, 30 hours after the superintendent reported for duty, and was closed October 26.

The total number of patients admitted was 92. The oldest was 77, the youngest 4. All patients who applied 48 hours before the closing of the hospital were admitted.

TABLE OF ADMISSIONS.

Under 10 years of age	2
Between 10 and 20	14
" 20 " 30	23
" 30 " 40	27
" 40 " 50	10
" 50 " 60	6
" 60 " 70	4
" 70 " 80	4

66% of patients received were from 15-45 yrs. of age.
55% of patients received were from 20-40 yrs. of age.

TABLE OF DURATION OF STAY OF PATIENTS AT HOSPITAL.

20 days	1	10 days	4
18 "	2	9 "	2
17 "	1	8 "	4
16 "	1	7 "	3
15 "	4	6 "	16
14 "	3	5 "	9
13 "	3	4 "	10
12 "	1	3 "	10
11 "	4	2 "	10
		1 day	2

The average stay was 7 days. Total number of days spent was 630.

TEMPERATURE OF PATIENTS WHEN ADMITTED.

96 degrees and under	3
96 degrees to 97 degrees	26
97 " " 98 "	35
98 " " 99 "	18
99 " " 100 "	5
100 " " 101 "	2
101 " " 102 "	1

The number of sub-normal temperatures on admission indicated extreme debility, a marked characteristic of patients suffering from this disease. A majority were unable to proceed to wards without assistance, and more than 50% were conveyed on stretchers from admitting room to wards.

The treatment of the convalescents consisted of rest, abundance of good food, fresh air, and ordinary tonic medicines. Convalesence was rapid. All pneumonia cases pursued a favorable course.

A very large percentage of patients were men who work out of doors. This may have no significance, as nearly all came from the laboring classes—60% came from lodging houses.

Over 90% of the patients received were convalescents from influenza. About 8% of the patients had pneumonia. About 5% were found to be suffering from other diseases, in addition to influenza.

All patients recovered and were in good condition when discharged, with the exception of three suffering from pneumonia, who will spend

their convalescent period at some other institution, or at home.

In the report to Emergency Public Health Committee, due credit is given to the medical staff, nursing force, seminarians, teachers and other volunteer workers for their prompt response and very efficient assistance.

Selected Papers.

SPEECH-READING FOR THE WAR DEAF.

By Clarence John Blake, M.D., Boston,

Professor of Otology, Emeritus, Harvard University; President, Ninth International Otological Congress.

I*

The study of the means to be employed in dealing with the cases of war deafness, which constitute a part of the disability incident to the struggle upon which this country has entered, must necessarily include the provision of a substitute, or supplementary, means of communication between individuals other than that through the medium of hearing.

This, whatever the degree or the character of the impairment of hearing, whether it be a total loss of sound perception or a distortion of the auditory impression of the spoken word or sentence is of importance, because it supplies a medium of communication in proportion to the individual need of the patient on the one hand and aids in establishing that sense of helpful relationship which must be one of the welcomes extended to those who have wagered their all in the defense of those principles for which this nation stands and by the preservation of which it continues to exist.

From the point of view of the surgeon, cases of war deafness fall into three general categories: Those in which there has been a previous disease of the ear; those in which the injury to the sound-transmitting apparatus of the ear originated in participation in war; and those in which, without objective structural injury, there has been the establishment of slowly progressive deleterious changes in the deeper-seated portions of the organ of hearing incident to protracted exposure to loud noise. In addition to these, there are the cases of apparently complete loss of hearing, often accompanied by loss of speech and other functional symptoms which are the result of a profound impressional shock to the nervous system, without auditory implication, for which no aural treatment is required, cases coming directly within the domain of neurology, but offering opportunity for helpful service on the part of the teacher of speech-reading under the direction of the neurologist.

From the point of view of the teacher, the differentiation should be not only that called forth by the degree of impairment of hearing, but by the individual adaptability of the pupil and the degree in which he will need to apply his acquired facility in the new means of appreciation of the spoken word when he faces the ordeal of trying again to take his place in the wage-earning competition of civil life. In this respect the teacher who can best visualize the influence exerted upon a well stabilized life of peaceful continuity by the interposition of a period of intense excitement and activity and the interjection of visual and auditory impressions of a most subversive character, will be the one to whom the medium of instruction in speech-reading will become the path leading to a broad field of usefulness, not only in helping the returned soldier or sailor, handicapped by an impairment of hearing, again to take his place in community life, but by making the teaching a medium of expression of appreciation of the service rendered.

The learning of speech-reading by the returned soldiers and sailors who need such instruction will be more or less important to all, and absolutely necessary to some, as a part of the effort at rehabilitation, and this work should be undertaken by the teacher chosen for that purpose, under authority, and by all others to whom the chance may later fall, in the true spirit of teaching as a contributive opportunity.

The application of speech-reading to the war deaf who will return to this country for repair, rehabilitation, and re-education can be made to cover a wide, a varied, and a helpful range, according to the degree of impairment, monaural or binaural, the possibility of surgical repair with a view to the betterment of intra-aural sound transmission, the consideration of the concomitant impairment of sound perception and the degree to which the new channel of speech transmission may be avail-

* Volta Bureau, Reprint No. 233.

able toward putting the very deaf, of war causation, again on the community level on which he previously stood and moved.

The combination of speech-reading with auditory re-education of the war deaf is another form of application of this new class of training—new in the sense of the exigency which has called it forth—and which presents problems urgent for solution to both the surgeon and the teacher beyond those presented by the casualties of civil life. Re-education of hearing has become an important part of the treatment in many forms of chronic and persistent ear disease, and its association with speech-reading, under conditions which shall convey the sound of the speech to the ear, either aërially or by bone conduction, and leave the lips of the teacher visible is one of its newer forms now being studied and elaborated. In cases of serious degrees of impairment of hearing the association of the visual and auditory impressions helps also in the formulation of the individual voice.

In cases of middle-ear injury, with the labyrinthine apparatus intact, the surgical repair process, including mobilization of the middle ear sound-transmitting apparatus, may be of slow progress or even, because of conditions of disruption, only moderately effective. In such cases the coincident training in speech-reading may be a means of interest and encouragement to the convalescent and, whatever may be the ultimate degree of rehabilitation of his hearing, an addition to his equipment in again taking his place in a working and competitive world.

In those cases beyond repair, those in which the impairment of hearing is absolute, because of the severity of the war injury, and those in which the implication of the labyrinth, in consequence of continued exposure to loud noise, constitutes a permanent defect, training in speech-reading is something more than a crutch—it is a new means of progression.

Many of the war deaf, as the result of long exposure to excessive gun fire and the incident noises of campaign, will be found to hear better, even adequately for ordinary purposes, in the presence of the noise of machinery in motion, of a railway train, or the clangor of a city street, or even under the influence of the mechanical vibration of that comparatively noiseless vehicle, an automobile; but such persons are often distressingly hard of hearing in a quiet place. In such cases, to meet the mutations incident to a change of environment, a knowledge of speech-reading is a constant stay and reassurance to the patient and should be taught with a due estimation of its value in this respect. In the case of psychic deafness the stimulation of the imitative faculty in speech-reading may be one of the keys which shall help to release the imprisoned consciousness, and when the considerable impairment of hearing, or its total loss, is not the only malady, but is associated with other crippling results of injury, other than loss of sight, the facility with which compensation can be afforded for the former disability will serve as an encouragement to effort in other respects, while even in the case of the blinded deaf, speech-reading by touch may become a medium of communication, as has been demonstrated in pupils of some of our civil institutions.

The demand for this special teaching of speech-reading to meet a vicariously created need suggests its usefulness as a part of the future curriculum of those who are to be of that body of citizens especially devoting their lives to the protection of the peaceful and righteous activities of their fellows, and the ability to translate speech by sight, as well as by hearing, would be a valuable addition to the equipment of all guardians of the public weal and should be seriously considered as a part of the necessary training in selected branches of army and navy and of other public service.

II*

To go overseas in the service of the immediate need and the ultimate good of humanity, with the touch of companionship, the fervor of a generous purpose, and the radiance of an illuminating spirit to light the way, is one thing; to return broken in body or in sense, racked with the memory of hideous things unfamiliar to the gentle, peaceful, striving life which went before, fatigued and weakened; to count the individual cost and face the future with a sense of terror in its competitive demand—these are conditions which must be bridged by earnest and persistent ready helpfulness. Through the barrier of altered conditions there must be stretched the firm grasp of friendship; above it must rise the voice of encouragement and cheer, and, when this cannot be heard be-

* Volta Bureau, Reprint No. 236.

cause of deafened ears or clouded comprehension, that silent voice which speaks in form of motion and which must be taught to be understood.

Because of the various conditions accompanying the impairment of hearing, as well as the varying degrees of this especial infirmity and its association as a part of other incapacitating injuries, it is important that the returned disabled soldiers and sailors should be aggregated in a center, or, later, in various centers, according to their numbers and general classification, for a more minute study of their cases and the determination of the more individual needs in repair and in re-education.

The advantage of congregation of cases is obvious, both for purposes of special examination and for treatment, and this applies as much to instances of sense disability as to those of injury to the trunk or limbs, where it is necessary to effect such surgical repair as may be possible, and then to supplement the disabled member by mechanical appliances suitable to some vocational use. The process of surgical repair may be short or long, extending over a period of a few weeks or months, or even a year or more, according to the extent of the injury, its character, and the recuperative power of the individual; and the educational process toward remunerative applicability may equally vary; but through it all the impression should be conveyed not of a sense of dependency, but of expectancy of achievement and of participation in the larger general welfare in behalf of the permanency of which the individual energy has been exerted and the self-sacrifice made.

To add to the cripplement of a limb the barrier of a sense of such accustomed use that the channel of its communication has been almost involitional is to add, often grievously, to the depression incident to shock, pain, and the sense of personal disaster, and the early effort to utilize and enhance the sense of hearing, to supplement it by its visual substitute, and to make these efforts the medium of encouragement, companionship, and uplift may advisedly be placed among the earlier efforts toward relief in the person of the home-coming soldier or sailor.

The method of application of the instruction in speech-reading and the auxiliary measures to be employed with it, by means of appeal to the auditory or the tactile senses, must be determined by the surgical examination which is to fix the status of the individual patient in reference to the treatment to be applied for his relief: In cases of disruption of the middle ear sound-transmitting apparatus with an intact labyrinth, the possibilities of repair and the degree of restoration of function; in cases of labyrinthine implication, the question of auditory re-education, coupled with remedial effort at partial rehabilitation; and in the cases without aural implication proper, but with a suspension of function consequent upon profound neural shock, the question of the value of a combined appeal to the visual and auditory senses as an associate means of primary entrance to the prison of the senses in which the patient is immured.

The ways in which speech-reading may be made to serve as the handmaiden of conversation in these various classes of cases will be later made the subject of more detailed description, and upon the basis of the preliminary appreciation that this particular and comparatively novel form of service, provision for instruction in speech-reading, may, for both material and psychologic reasons, be made one of the earlier equipments in provision for the reception of our disabled troops.

Even in such extremity of disaster as the loss both of sight and of hearing, the effort to use speech-reading by sense of touch need not be without avail, as has been proven in instances of facile pupils among deaf and blind children, the sensation of the expired breath lending its aid to the appreciation of the cryptogram of the mobile lip and face muscles, the teacher speaking against the cheek, the forehead, the bared arm, the back or front of the hand, or the finger-tip of the pupils, the lessons being supplemented by the hand touch or scriptorial alphabet or by instruction in Braille.*

With adults in whom the speech formulae have already been created and used until they have become a part of the habit of life, their translation, mentally, into a recognizable, mutable form is a very much more easy matter than where the structure of position and motion must be built from its foundation, as is the case with the deaf and, mentally, mute

* In the conjoint study of the sense perceptions of the blind and deaf made by Profs. G. Stanley Hall, William James, J. J. Putnam and the writer, it was found that the tactile acuity of perception of the skin in increasing ratio was in the order of the parts above named.

child, who, lacking both hearing and any conception of the meaning of the labial and facial positions, must be provided with a mental postulate upon which the speech-reading can be built.

It does not follow, however, that the teaching of speech-reading to wounded youths and men will be a contrastingly easy matter, and this the teacher taking such work in hand must bear in mind, for the physical condition of the pupil, in reference to the strength he has to spare, the duration of his ability for concentration, the extent to which his mental processes have been obtunded or impaired, as well as the character and quantity of his hearing power, as an ancillary medium of communication, should all be taken into consideration.

A comparative study of so peculiar and unusual a class of pupils, the discriminative study of even a single individual, disrupted from his habitual course of life and put in an especial class, is one for which the teachers of speech-reading cannot singly be considered competent.

The teaching of speech-reading to the deaf in such a central hospital must be formulated, so far as its application to the patient is concerned, upon the opinion and direction of the hospital medical staff. In other words, it is to be regarded as one of the remedial measures which is to be authoritatively prescribed. When judiciously administered it will be far more than a means of relieving the tedium of convalescence and providing an added help toward re-entering the working and participating world; it may be made the medium of instruction and of encouragement or, unwisely taught, too strenuously insisted upon, it may cause fatigue and discouragement and be a check upon recuperation.

The unusual conditions of these especial pupils to be so welcomly received, so eagerly awaited, in the hope of rendering them some service, awaken emotions which, to be made of their true value, must be subordinated to cool-judgment of conditions and the needs, and be flexibly ready to do the requisite teaching as a part of hospital team-work, one of the advantages of this preliminary hospital concentration being not only that the patients can be compared and studied as to their needs, but that the necessary provision for their future may be justly estimated and those attendants and teachers (from different parts of the country) trained who are to continue the teaching and the speech-reading habit, it being the accepted axiom of the modern hospital that an equal, if not a greater, value of its purpose lies in its extra-mural work. The control hospital in which speech-reading for the war deaf is to be first applied thus becomes also the center for the speech-reading clinics in different parts of the United States, already wisely provided for, and the principle of team-work is thus extended and provision and a foundation made for that acquaintance with speech-reading, on the part of the community, which will ultimately lead to a due recognition of its educational value and to its inclusion in the stated curriculum of our schools and colleges.

(To be continued.)

Society Reports.

JOINT MEETING OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION AND THE LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.

The joint meeting began with a Symposium on Bronchoscopy, the first paper of which was one entitled "Localization of the Tracheobronchial Tree; Preliminary Report of a New Method," by Dr. Chevalier Jackson, Philadelphia, Pa.

THE BRONCHIAL TUBE: ITS STUDY BY INSUFFLATION OF OPAQUE SUBSTANCES IN THE LIVING.

CHEVALIER JACKSON, M.D., PHILADELPHIA.

1. In intrabronchial insufflation with opaque substances, in the living, we have a measure of the greatest usefulness in mapping out the tracheobronchial tree in foreign body cases in which a foreign body is far in the upper lobe bronchi or in other small bronchi that cannot be entered by the bronchoscope. A stereoscopic pair of radiographs will show the bronchi *in situ* in the living, and the bronchi can be followed in the fluoroscope.

2. The intrabronchial insufflation of dry bismuth subcarbonate, through the bronchoscope, in sufficient quantities to cast a shadow did not produce any untoward symptoms, and the bismuth totally disappeared from the lung by expectoration in twenty-four hours.

3. The insufflation of dry powders and the injection of opaque fluid mixtures through the larynx gives a degree of visibility of the trachea and larger bronchi in the radiograph; but the results are not as good as when the insufflation of a dry powder is done through the bronchoscope.

4. The method is available for an enormous field for investigation of the action of the living cilia, in health and disease, the lymphatic drainage of the lung, the mapping out of bronchiectatic and abscess cavities, etc.

SUSPENSION AS I USE IT TODAY.

Robert C. Lynch, M.D., New Orleans.

The patient lies flat upon the table with the head extended; the crane is attached as far back on the table as is possible, allowing only sufficient room to turn the handle which moves it horizontally; the vertical position of the crane will now be on a line with the patient's shoulders. The mouth is open wide by placing an ordinary mouth gag in the left angle of the mouth, and this is steadied by the assistant, who has only to keep the head extended in the middle line, there being no need for support, since the head is resting on the table. The hook is the same in its every detail as presented to you before, and we have done away with the long tooth plates and dental spoons. The gag of the hook, instead of being closed, is now introduced sufficiently open to permit a view of the tip of the spatula.

Instead of passing the spatula along the postpharyngeal wall, he now follows down along the base of the tongue until the epiglottis is seen, then it is lifted with the spatula just as one does in bronchoscopy, and by this time the short tooth plates will fall behind the teeth, when the gag is opened wide to fix the tongue and epiglottis. Now the hook is placed upon the crane and the worm gear joint turned to bend the hook slightly to an obtuse angle. The crane is lifted in the vertical to flatten the base of the tongue, and this will raise the epiglottis so that the larynx will come into view. If the view in this position is not already sufficient, then by moving the horizontal crane towards the head of the table will bring the anterior commissure into view far better and much easier than the old method.

This differs from the older technic in that the head is flat upon the table, and any untrained assistant can hold it steady, and the patient is not dragged over the top of the table as before, and the mouth is wide open with a gag giving plenty of room for the introduction. There is no necessity for the table to be cut, as has been described, nor for the projecting platform, since the crane is attached far back on the table behind the patient rather than ahead of him. There is no danger of dropping the patient from the crane or from the spatula, since the head is not lifted from the table, or, if so, just enough to procure sufficient tension to flatten the tongue.

The view is much more natural, and, if anything, clearer and less distorted, since there is much less tension at the region of the hyoid bone and the base of the tongue. The vocal cords, instead of being stretched anteroposteriorly, are now more relaxed, as shown by the respiratory movement under ether, and by the tones emitted under cocain. This, of course, permits of more accurate dissection, especially when removing the small tumors, such as vocal nodules. One looks now down the spatula along the line of the trachea and can usually see the bifurcation, as is shown by the possibility of introducing a bronchoscope deep into either bronchus.

In the old way, one looked from below up along the spatula, and it was impossible to get the bronchoscope further down than the fourth ring of the trachea. Consequently, in this new position, there is really no need for a table that can be elevated, though it is always a comfort for any operative procedure. Finally, the patient will complain much less of after pain about the angles of the jaw, back of the neck and of headache. There is much less danger of pinching the tongue between the spatula and the teeth of the lower jaw, and it is much easier, more rapid and more accurate to introduce in this way than the old way.

SOME ORIGINAL METHODS OF TREATMENT OF LARYNGEAL STENOSIS.

Samuel Iglauer, M.D., Cincinnati.

For patients who are wearing a tracheal cannula, the author follows the same principle which underlies the use of rubber tubes in laryngostomy, which has the advantage of being employed without the necessity of splitting the larynx.

The methods used are:

1. Dilatation by means of a rubber tube doubled upon itself. The length of the tube when doubled should approximate, as nearly as possible, the distance from the arytenoid to the upper margin of the tracheotomy. A string is fastened to the rubber tube, which is wrapped clockwise about the stem of the tracheal cannula, and then fastened to the patient's neck with adhesive plaster. This is to prevent the tube gliding past the tracheal cannula.

Another string is allowed to protrude from the patient's mouth to serve as an extractor when the tube is to be changed. This method permits a certain amount of pneumatic pressure because of the air in the tubing.

The second method is the insertion of a single rubber tube from below. The third is intubating by traction.

In the latter two small holes are bored in the lower end of an intubation tube, one in its anterior and the other in the posterior surface of the tube. A stout silk cord is then passed through both these openings, while the head of the intubation tube is threaded in the usual manner.

Removing the tracheal cannula, a cord is introduced through the tracheal opening until it presents into the mouth. This string is fastened to that attached to the lower end of the intubation tube. Traction is made with a guiding finger in the larynx, the intubation tube drawn down in position.

The diameter of these intubation tubes may be increased by stretching rubber over the tubes.

Finally, clamped Rogers intubation tubes may be employed.

DISCUSSION ON SYMPOSIUM.

DR. EMIL MAYER, New York City: While I have not tried the method Dr. Lynch described, it appeals to me in every way. Whereas in our old method we have hung up the patient and practically held the weight of his body on the teeth and the tip of the epiglottis, today that patient can, thanks to this method, rest on his back. Instead of hanging the patient up, we are really only opening his jaws. We are getting much closer to his larynx, and are able to go in farther. I have only words of praise to say of the method. I can understand that with the mouth wide open you are nearer and can see better to handle the patient with the fewest number of assistants.

I was particularly interested in the paper of Dr. Iglauer, as I had reported at the meeting yesterday the case of a boy who had worn an intubation tube for five years before I was able to do away with it. I want again to call attention to the fact of the extreme tolerance of the larynx to manipulations of various sorts. I rather feel that I should disagree with Dr. Iglauer in regard to doing a dissection and making an open wound in the larynx, if you can divulse it in any other way. I have always been able, after a comparatively short time, to have the opening wide enough in the cases that I have seen, to put in the ordinary uterine dilator, either from above or from below, and preferably the latter, and dilate the parts without making any wound.

Again I should object to the leaving of any cord in the patient's mouth and fastening it to the cheek. Those who lived in the early days of intubation thought that they could help O'Dwyer by leaving the cord fastened to the intubation tube in the mouth, but the cord was either bitten through or pulled out by the child, and the attempt was abandoned. My experience is that a piece of rubber tubing fastened at the upper and lower ends acts as a balloon and can be introduced in the manner described, which is quite the manner that I use.

One other thing: I prefer to keep the rubber tube *in situ*, leaving a double end of cord and tying it around the neck, rather than fastening it to the tracheotomy tube.

The ingenious method of holding an intubation tube in position by drawing it down is one that I think is extremely valuable. The speaker described a method of slow intubation successfully used. During the Spanish-American war he was asked to look after a soldier who had been in the battle of El Caney. Lying on his face, he had been shot by a sharpshooter who was in a tree. When picked up the injured man was bleeding from the mouth, a piece of tissue was hanging from the mouth, and there was an abrasion over the eye. The diagnosis made at the field hospital was that it was a glancing shot and that the eye was not injured. He was put on the transport and sent to Bellevue Hospital, where a tracheotomy was performed. He was walking around wearing a tube, and some ladies asked Dr. Asch

and myself to see what could be done. As soon as I looked into the throat I saw a hole punched in the soft palate, as though I had put in a punch and taken out a piece. I learned that the man had been shot from above, the bullet going down through the maxillary bone, cutting the soft palate, smashing the thyroid cartilage, entering the esophagus, and passing out into the stomach spent, and finally passing per rectum.

I began slow dilatation, and finally got the larynx dilated so much that I thought I could introduce an intubation tube, but as soon as I put it in, the man got blue. I had an intubation tube made of the same external size, but with a larger opening and with an introducer that was hollow, so that the minute it got in, the man breathed through the handle, and I could intubate him for any length of time. In that slow way I could get the intubation tube into the larynx. I mention this method because some such things might arise in this present war.

Dr. Hubert Arrowsmith, Brooklyn: I cannot see how, referring to Dr. Jackson's method, in view of the fact of the little harm that was done in the old days by copious insufflations of powder into the air passages, a little bismuth could do lasting harm, and I should thing that this method would be of extreme value in helping us out in these very uncertain and difficult to locate small foreign bodies. Since I heard Dr. Lynch speak of this in New York last fall, I have used this method continuously, and I can corroborate his statement concerning the greater facility with which the speculum is introduced, the infinitely greater comfort with which it is retained by the patient and the improvement of the operative field.

Dr. Joseph C. Beck, Chicago: I had a case of a man who had a lung full of coal. He showed a beautiful bronchial tree, and I made experiments with forced inhalation by means of the Billings inhaler of anilin dyes that are radiographically obstructive. This picture, which I am sorry to say I did not bring, showed that if not the insufflation, perhaps the forcible inspiration of radioöbstrusive substances that would be vaporized might be of some value.

Some of you may remember at the American Congress of Surgeons, that I was going to demonstrate suspension laryngoscopy in a patient under general anaesthesia, and was unable to put his head over the edge of the table. Finally I succeeded, with the patient's head flat on the table, and thought that made a bad job of the demonstration of suspension as then taught. The next day I asked this patient to bend is head back, and he said, "I never could; I have a stiff neck." I have employed this method, as demonstrated by Lynch, for a year. Three weeks ago I had a patient with a little growth in the larynx, of which I could not obtain a good view with the head on the table, but I succeeded very nicely with the old method, so perhaps there are some cases that would still be better handled with the old method. I do not know what was the reason—perhaps some anomalous condition about the hyoid bone.

The method that Dr. Iglauer spoke of, of using the full length intubation tube, I have used with satisfaction, and the new method that he has described today I will employ. I had a similar accident to the one he spoke of, in using the full length intubation tube. It did not perforate, but engaged in the wall of the trachea, and I had considerable difficulty in manipulating it. This method that he describes today will do away with some of those difficulties.

Dr. Henry L. Lynah, New York City: Dr. Jackson has given us a great aid in bronchoscopic localization by his bismuth insufflation method, especially in difficult localization of small foreign bodies which do not show in the X-ray plate. I have used the bismuth esophageal capsule in many cases which did not show in the X-ray, and by this aid have been able to locate the foreign bodies and remove them.

As far as bismuth irritating the bronchi is concerned, there seems to be little discomfort about it. We have had two cases with tracheoesophageal fistula who complained of difficulty in swallowing. The diagnosis of tracheoesophageal fistula was made from the radiograph. After swallowing the bismuth meal there was a violent attack of coughing, and when the X-ray pictures were taken they showed the whole of the tracheobronchial tree in bismuth shadow. All of the bismuth was subsequently coughed out. After having had this rather unpleasant experience, neither of the patients returned to the hospital for further treatment.

I should like to ask Dr. Lynch whether he removes the apparatus after he passes the bronchoscope, especially when he has to rotate the head in examining the upper lobe bronchi. The improved Lynch position of the semiflexion of the head in the examination of the larynx is very advantageous, but there is no advantage of suspension bronchoscopy over the other methods which are much simpler in technic.

Dr. Iglauer has brought forward in his paper one of the most difficult problems which we have in surgery. It does not matter how you cure a case of laryngeal stenosis, as long as you get the case well. That is all we are striving for. The voice, in the final outcome, has been far better in the cases cured by intubational dilatation than in those cured by laryngostomy. But when there has been extensive sloughing of the thyroid and cricoid cartilages and complete stenosis, laryngostomy is the only method indicated. You cannot get the larynx dilated from below or from above, and the method of Rogers to dilate the stenosed larynx by means of urethral sounds from the tracheal fistula upward will dilate the larynx, but considerable force is necessary and often an esophageal false passage is the result. If you attempt forcibly to dilate from above downward you invariably have a false passage as a result, and the case may succumb from mediastinal infection. Laryngostomy is by far the safest and best method of curing this type of case. As far as the string is concerned, I agree with Dr. Mayer that it is a very bothersome thing to leave in the mouth and may also be a source of danger, for the child can easily remove the tube by constantly tugging at the string with the tongue. This is, however, impossible with the anchored tubes of Dr. Iglauer.

In cases who have recovered from acute laryngeal diphtheria the tube has often been detubated by the tongue of the child and may be in the esophagus and is noticed only at the time the nurse finds that the child has difficulty in swallowing, while the child has been breathing quite naturally during this time and the tube thought to be in place. If the string must be left on the tube, it is far better to bring it out by means of a small catheter through the nares and attach it to the side of the face. This causes no discomfort, and the child cannot remove the tube with the tongue.

DR. FIELDING O. LEWIS, Philadelphia: I was especially interested in Dr. Iglauer's paper, and it has been my pleasure during the last year to have four of these cases operated on by the method of Dr. Jackson. I have some drawings which show three of these cases before and after operation, and wish to present Dr. Jackson's laryngoscopy tube with the rubber extension which I have used in all these cases, the advantage of which is that it prevents the formation of a tracheal spur between the tracheotomy tube and the extension, whatever it may be, above. It also permits breathing through the tube, the upper part not being completely closed.

DR. JOHN W. MURPHY, Cincinnati: Before Dr. Iglauer devised this method, as we usually worked together, we had a good deal of difficulty in getting these cases so that they could leave the hospital. They were with us for months at a time. In several of these cases, and the one which he mentioned, too, there was absolutely no opening from the upper part owing to the patient's having worn a tracheotomy tube until the upper part of the larynx had closed, so that even a filliform bougie could not be passed. By means of a fine sound, however, we succeeded in getting a minute opening through this membrane. It is not safe to attempt to enlarge the opening with any instrument. We find that the moment we can get the finest probe through and carry a string down and draw the tube up, we take much less risk of doing damage, and by this continuous method of dilatation we get much more satisfactory results than by any other.

The method of Dr. Lynch has been employed sometimes by me since I saw him use it, about a year ago. I find it simpler and very much more comfortable to the patient.

DR. GEORGE F. COTT, Buffalo: I had the same experience as Dr. Beck. In my case the patient had difficulty in breathing. I put him under ether and tried to introduce the bronchoscope and found that I could not put the head back far enough. The next day he told me that he had ankylosis of the vertebrae of the neck. That is a thing that does occur now and then.

DR. WOLF FREUDENTHAL, New York City: It seems to me that the method of Dr. Lynch is a great improvement over the old one, yet I

am not ready to give up the original Killian method with the head hanging down, for a certain class of cases. I operated with suspension laryngoscopy in a tuberculous case in which any effort on the part of the patient was not desirable on account of hemorrhage. For this class of cases the new modification is really excellent, but we encounter cases in tuberculous patients which do not go as you want.

Dr. Robert C. Lynch, New Orleans: I want to correct a wrong impression on the part of Dr. Cott. Cases of the acute type would get well sometimes, and when the child was recovering from the stenosis lesion the tube could be easily coughed up without anyone knowing of it. We recently had admitted to the hospital a child that had a tube put in by a specialist. The child was then sent to the hospital, and when he got there the tube was stuck to the side of the mouth. He was cyanotic. One of the house staff pulled the string and found the tube was probably in the stomach. The child can cough the tube out when the stenosis is subsiding without there being any evidence of it.

Dr. Harmon Smith, New York City: A few years ago Dr. Lynch reported no recurrence after removing papilloma, and I thought that he had solved this problem. It would be interesting to know whether the growths were single or multiple, and whether single or multiple in children or in adults, because I think that the class of growth materially affects the problem of recurrence. In the multiple variety in children the more they are interfered with the more they recur, and even after all methods have been tried, the tracheotomy tube, for a long length of time is, I think, one of the safest modes. Secondly, the removal of a growth in an adult and its non-recurrence does not assure us that after removing a papilloma in another adult it will not recur. Papillomata vary in type, in malignancy and in tendency to recur, and from the pathologic standpoint you are unable to deduct whether or not the tumor will recur. Another point that I should like to have brought out by Dr. Lynch, is whether he has ever employed fulguration alone, because, with the suspension, as he employs it, the surface of the larynx can be made as dry as the face, and I have always contended that if you can dry the surface of the papilloma in the larynx and can be sure that it will remain dry during the fulguration, the fulguration will overcome it—except in the multiple variety in children.

CLOSING DISCUSSION ON SYMPOSIUM.

Dr. Chevalier Jackson, Philadelphia: So far I have used the method presented only in cases in which it promised benefit to the patient, directly or indirectly, for localization or therapeutic effect. It remains to be determined whether or not we may expect benefit to chronic bronchitis, pulmonary abscess and other lesions. I used dry powder, and it was coughed out completely in twenty-four hours. Possibly other preparations might not be so readily gotten rid of. I hope Dr. Arrowsmith will try to devise a way of getting the dry powder or some suitable preparation down through the larynx without having to pass the bronchoscope. The method then would be of general application by the roentgenologist. Localization, individual variation, bronchiectasis, abscess and other pathology could be read ily demonstrated.

The treatment of obstinate tracheal stenosis has been a hobby with me for many years. The method developed by Dr. Ellen J. Patterson and me gets the patients well. Our experience coincides precisely with that of Dr. Lynch as to the indications for laryngostomy. Our experience also coincides with that of Dr. Mayer and Dr. Iglauer in regard to the use of another method when one method does not succeed. In laryngostomy the operation is of less importance than the after care. Too many cases are reported too soon. Dr. Patterson insists on a period from one to three years before doing the plastic operation for closure of the laryngostomic opening. One of our patients who lives in Chicago was recently sent to Dr. Beck for plastic closure, and I think he can testify to the widely open larynx obtained by the method devised by Dr. Patterson and me.

Dr. Robert C. Lynch, New Orleans: In response to the question of Dr. Lynah as to whether we removed the suspension in bronchoscopy, especially in work on the upper bronchi, I would say that it is preferable in these cases to do the bronchoscopy without suspension, the apparatus being used for the simple passage through the vocal cords. When it has

entered the trachea, the suspension has served its purpose, and the rest is better done without the suspension apparatus being *in situ*. The only exception is where there are multiple foreign bodies, when it is necessary to introduce the tube several times, and retention of the apparatus will save the traumatism induced by passing the apparatus through the larynx of an infant or young child.

Replying to Dr. Smith, all of these cases were put in this appendix on the recurrence of papilloma after dissection purposely to contradict my statement made at first, when I reported sixteen cases of papilloma of the larynx removed by the dissection method without recurrence. I had had no experience with recurrence up to then, but since then the cases have increased, and my knowledge in proportion, and we have had these five recurrences after dissection by means of suspension. I reported that particularly to contradict my own statement that there were no cases of recurrence.

The cases were all multiple. They were all in children, and I brought out the point that they recurred after some inflammatory attack in three instances, and without reason in two. I have used fulguration, and believe that in the multiple cases possibly it is better than dissection. Recently I have been drying the papilloma by swabbing the surface first with alcohol and blowing in compressed air to dry out the water that is in the papilloma and then fulgurated it.

DR. SAMUEL IGLAUER, Cincinnati: As a matter of fact, I do not always leave the string in the mouth, but I find that it takes a little time and trouble to depress the tongue and find the tube by the ocular method. The question is, How sharp are the teeth? We have one little fellow who has very sharp teeth, and he usually chews through the string. As far as the tube being coughed up and getting into the esophagus is concerned, that is impossible in this method, because the tube is anchored below. I find that by leaving the string in the mouth it is easy to make the change when I want to put in a fresh tube. I think that we should devise all methods we can to facilitate treatment, because no matter what method is used, the chief things are persistence and patience. If you can save the time in your daily work, it counts, both for yourself and the patient.

So far as I know, there has been no spur formation. When one uses the intubation tube, one can work the rubber covering downward on the posterior lip of the tube, and that prevents the formation of a spur.

As for laryngostomy, there is no objection to it in special cases, but if one can treat a case without splitting the larynx one is better off.

(To be continued.)

THIRD RESUSCITATION COMMISSION. PROCEEDINGS AND RESOLUTIONS.

EDITED BY PROFESSORS HOWELL, STEWART AND THOMSON.

(Under the Auspices of the Committee on Safety Rules and Accident Prevention of the National Electric Light Association.)

THE Commission met in New York at the Rockefeller Institute Friday, May 17, 1918.

There were present at the meeting: Past Assistant Surgeon E. F. DuBois, U.S.N.R.F., of the Bureau of Medicine and Surgery, Navy Department; Dr. D. L. Edsall, Professor of Medicine and Dean, Harvard Medical School; Mr. W. C. L. Eglin, Chairman of the Committee on Safety Rules and Accident Prevention of the N.E.L.A.; Dr. Yandell Henderson, Professor of Physiology, Yale University, and Consulting Physiologist of the Bureau of Mines; Dr. Wm. H. Howell, Professor of Physiology and Assistant Director of the School of Hygiene and Public Health, Johns Hopkins University, Member of the National Academy of Sciences; Dr. Reid Hunt, Professor of Pharmacology, Harvard Medical School, Secretary of Commission; Professor A. E. Kennelly, Professor of Electrical Engineering at Harvard University and the Massachusetts Institute of Technology; Dr. Charles A. Lauffer, Medical Director of the Westinghouse Electric Co., Pittsburgh, Pa.; Dr. S. J. Meltzer, Rockefeller Institute, Chairman of the Commission, Member of the National Academy of Sciences; Dr. Joseph Schereschewsky, Assistant Surgeon General, U. S. Public Health Service; Dr. G. N. Stewart, Professor of Experimental Medicine, Western Reserve University, Cleveland; Prof. Elihu Thomson, General Electrical Co., West Lynn. Mass., Member of the National Academy of Sciences; Lieutenant-Colonel Edward B. Vedder of the Army Medical School; Major Frank G. Young of the Ordnance Division of the War Department.

A telegram was received from Surgeon-General Gorgas that Dr. Charles H. Frazier, Professor of Surgery, University of Pennsylvania, is to represent his office. (In a subsequent communication Major Frazier accepted his appointment). Conferees: Mr. P. H. Bartlett, Philadelphia Electric Company; Mr. Wills Maclachlan, Electrical Employers' Association, Toronto, Canada; Mr. C. B. Scott, chairman of the Sub-Committee on Accident Prevention N.E.L.A.; Dr. F. E. Schubmehl, General Electric Co., West Lynn, Mass.

The object of the Commission, the Chairman stated, is to consider efficient methods of artificial respiration in emergency cases, *as they are met with in peace as well as in war.* For more than a century, England has had several life-saving societies, and many special commissions have been appointed to investigate the methods employed in resuscitation. In this country, about six years ago, a Commission on Resuscitation from Electric Shock was created for the first time, by the initiative of the National Electric Light Association. It is now generally recognized that efficient artificial respiration is, for such conditions, the best and practically the only means available for resuscitation. It requires but little consideration to realize that the need for an efficient means of artificial respiration is very widespread.* The Committee on Safety Rules and Accident Prevention of the N.E.L.A., of which Mr. Eglin is the chairman, agreed that *the Third Resuscitation Commission should consider its problems from a general point of view.*

Mechanical Methods. Dr. Meltzer demonstrated in the laboratory for physiology and pharmacology, the efficiency of the method of pharyngeal insufflation in an etherized dog after complete removal of the anterior wall of the thorax, in which the lungs and heart were exposed to full view. (18 minutes.)

Dr. Rossiter, of the Carnegie Steel Company, demonstrated the latest device of the Pulmotor Company, which is not identical with the original pulmotor. He showed, also, the original pulmotor. He stated that he had resuscitated eight gas cases, in which the respiration had stopped. This was done by the original pulmotor, in which he had more confidence. (30 minutes.)

Dr. James M. Booher, Medical Director of the Life Saving Devices Co., demonstrated the lungmotor. He showed a number of blood pressure tracings, taken from animals which had received artificial respiration by means of this apparatus. In reply to a question, Dr. Booher stated that in these experiments the lungmotor was connected with the animal by means of a tracheal cannula. (In human cases the lungmotor is applied by means of a face mask.) Dr. Booher left with the Commission histories of a number of cases in which the lungmotor had been used. (30 minutes.) (The Commission found no time to examine these written histories, but Dr. Booher mentioned verbally especially two cases. One of these cases was subsequently investigated by the Chairman. The life of a poliomyelitis patient with complete paralysis of the respiration was maintained for thirty-six hours by means of the lungmotor. The reporting physician is of very good standing.)

In introducing Mr. Foregger, the Chairman explained that the physician who was most competent to present the details of the apparatus of the Foregger Company is now in France. Mr. Foregger was allowed fifteen minutes. The apparatus consists in modifications of the insufflation apparatus of Meltzer. Among other changes, the apparatus carried an oxygen generator tank. In reply to a question, Mr. Foregger stated that the oxygen thus generated may last eight or ten minutes.

Manual Methods. Mr. Eglin read a letter from Mr. M. W. Alexander of the General Electric Co., stating that he hoped the "Commission would be very definite in recommending the prone-pressure method, as experience has proved its value."

Mr. C. B. Scott stated that the Accident Prevention Committee of the N.E.L.A. had reached the point in its investigation where it felt that the prone-pressure method was best to recommend, bearing in mind that machines are not always available in emergencies. His own company had had nine successful cases of resuscitation by the prone method and three unsuccessful cases in which mechanical means were used.

Dr. Schubmehl stated that the prone-pressure method has been most successfully applied by their two hundred and twenty-five first-aid men.

* For instance, in injuries to the head which stop respiration, injuries to the chest (especially double pneumothorax) in laparotomies during which the respiration ceases occasionally, in cases of shock which occur in peace and more so in the present war, in poliomyelitis with stoppage of respiration, in post-diphtheritic paralysis, in poisoning by opiates, by volatile gases (ether, chloroform, etc.,) by mine and fuel gases, poisoning by magnesium salts, in electric shock and in drowning.

Mr. Maclachlan stated that he had the duty of training possibly three thousand men in the prone method. Their system required the men to practice this method at least once a month. The men are instructed not to desist in less than three and a half hours, and that not till then should they listen to advice from a physician who might tell the operator that the patient was dead.

The Secretary read the following parts of a letter from Professor Schäfer of Edinburgh to the Chairman: "The prone method has been adopted *exclusively* for about twelve years by the Royal Life Saving Society, the only important organization in the British Empire whose object is the resuscitation of the apparently drowned. It has also been adopted for several years by the London and other police force, by the Board of Trade, by the Army and the Navy." "The most important thing is in cases of drowning to have something ready which any man can use; which will effect respiratory exchange—whether exactly as much as normal, matters very little."

RESOLUTIONS ADOPTED BY THE COMMISSION.

In the discussion following the presentation of methods and evidence to the Commission the following important facts were emphasized:

1. That in most accident cases no resuscitation apparatus is at hand for immediate use.

2. That reliance upon the use of special apparatus diminishes greatly the tendency to train persons in the manual methods and discourages the prompt and persevering use of such methods.

3. The police officers or physicians often interfere with the proper execution of manual methods, in that they direct that the patient be removed in an ambulance to some hospital, thus interrupting the continuance of artificial respiration.

4. That in many hospitals the members of the staff are not all acquainted with the methods of artificial respiration.

5. That in medical schools instruction is not properly provided for students in the manual methods of artificial respiration.

In view of these facts the following resolutions were adopted by the Commission:

1. The prone-pressure or Schäfer method of resuscitation is preferable to any of the other manual methods.

2. Medical schools, hospitals, fire and police departments, the Army and Navy, first-aid associations, and industrial establishments in general, should be urged to give instruction in the use of the prone-pressure method of resuscitation.

3. Individuals who, from accident or any other cause, are in need of artificial respiration, should be given manual treatment by the prone-pressure method immediately on the spot where they are found. It is all important that this aid be rendered at once. The delay incident to removal to a hospital or elsewhere may be fatal, and is justifiable only where there is no one at hand competent to give artificial respiration. If complications exist or arise, which require hospital treatment, artificial respiration should be maintained in transit, and after arrival at the hospital, until spontaneous respirations begin.

4. Persons receiving artificial respiration should, as much as possible, be kept warm and the artificial respiration should be maintained till spontaneous breathing has been permanently restored, or as long as signs of life are present. Even in cases where there is no sign of returning animation, artificial respiration should be kept up for an hour or more.

5. A brief return of spontaneous respiration is not a certain indication for terminating the treatment. Not infrequently the patient, after a temporary recovery of respiration, stops breathing again. The patient must be watched and if normal breathing stops, the artificial respiration should be resumed at once.

6. Artificial respiration is required only when natural respiration has ceased. In cases of simple unconsciousness from any cause in which natural respiration continues, artificial respiration should not be employed without medical advice.

7. The Commission recommends that in cases of gas asphyxiation, artificial respiration, whether given by a manual method or by special apparatus, should be combined when possible with the inhalation of oxygen from properly constructed apparatus.

8. With regard to the employment of mechanical devices for artificial respiration the Commission feels that it ought not at present to take a definite stand either for or against any particular form of apparatus. However,

the Commission recommends, that the use and installation of apparatus should be confined, for the present, to properly equipped institutions under medical direction. The Commission recognizes the great need of simple devices capable of performing artificial respiration reliably and efficiently. It therefore recommends a careful study of the problem, directed toward *the development of a reliable method appropriate for general adoption.* Such studies can best be carried on in properly equipped hospitals and laboratories which offer opportunities and facilities for critical observation and experimentation.

In view of the importance which the knowledge of proper methods of resusciation possess for public health and safety, and considering the fact that many practitioners, members of hospital staffs and graduates of medicine are not thoroughly familiar with the methods of resuscitation, especially that of the prone-pressure method, the Commission recommends:

(*a*) That medical journals (and other scientific and practical journals which are interested in the problem of resuscitation) be asked to publish the resolutions adopted by the Commission.

(*b*) *That a copy of these Resolutions* be sent to the medical colleges with a request that proper instruction in this subject shall be arranged for in the *College Schedules.*

(*c*) That these resolutions be sent to as many hospitals as possible, with the recommendations that members of the house staff shall familiarize themselves with the methods of resuscitation.

(*d*) In order that the resolutions of the Commission may be brought to the attention of interested circles (fire and police departments, industrial plants, etc.), it was agreed that they be communicated to the Associated Press (by the National Electric Light Association).

It was voted that the Third Resuscitation Commission should be properly organized and continue its existence, ready to respond when requirements arise. The following officers were elected: President, Dr. S. J. Meltzer; Vice-President, Dr. Yandell Henderson; Secretary, Dr. Reid Hunt; Treasurer, Mr. W. C. L. Eglin.

It was voted to appoint a committee for the collection of verifiable data relating to resuscitation. The President appointed to the committee: Dr. D. Edsall, Chairman; Dr. Reid Hunt, Secretary; Prof. Elihu Thomson, and the President, *ex-officio.*

The Commission consists of fifteen members. Fourteen approved the foregoing report without qualifications. The fifteenth member wishes to qualify his vote by the following:

STATEMENT.

Dr. Yandell Henderson qualifies his support of the resolutions as follows:

While I concur in a considerable part of the report of the Resuscitation Commission I dissent from the statement in Resolution 8 recognizing "the great need of simple devices capable of performing artificial respiration reliably and efficiently."

Devices which are excellent from the mechanical standpoint are now available and widely sold; but the evidence regarding them indicates clearly, I believe, that even if these devices were on the spot where several gassings or electrocutions occurred, and if all the victims were treated with them, except one who was given manual (prone-pressure) treatment, this one would have much the best chance of recovery. In actual practice the apparatus is seldom right on the spot adjusted and ready. Critical time is lost, and thus in the above suppositious cases, as they actually occur, the only victim with any considerable chance of resuscitation (aside from those who recover spontaneously and are credited to the apparatus) is the one treated manually.

Even more important is the fact, demonstrated now by universal experience, that when apparatus is known to be obtainable, it is sent for and the manual method neglected. Thus today the apparatus in public use is, on the whole, contributing very materially to decrease the saving of life.

American Medical Biographies.

FIRMIN, GILES (1615-1697).*

GILES FIRMIN practised medicine all his life, although his chief reputation was gained as a religious writer and dissenting divine in England, after he was thirty years old. Dur-

* From the forthcoming "American Medical Biography" by Dr. Howard A. Kelly and Dr. Walter L. Burrage. Any important additions or corrections will be welcomed by the authors.

ing his early manhood he served the inhabitants of Ipswich, Massachusetts, as physician, for six years, and he may have practised in Boston previously. He lectured on anatomy, and his teaching stimulated the General Court to pass an act in 1647 reciting the necessity for the study of anatomy and authorizing students of medicine to read anatomy and to "anatomize once in four years some malefactor."

In a letter to Governor Winthrop, dated at Ipswich, February 15, (1640 ?), Firmin says: " . . . only for matter of employment I have as much here as I desire and love my planting more than it, only the highest ambition of my thoughts and desires are to be useful and servicable here in a common way. . . We have divers very ill; and fluxes and fevers, I observe, are very dangerous."

Firmin was born in the County of Suffolk, England, in 1615. His father, Giles Firmin was an apothecary of Sudbury, who came to New England in the fleet with Winthrop, was chosen deacon of the church at Boston, and died in that town previous to October 6, 1634, being selectman at the time of his decease. The son studied at Cambridge, England, under the tutorship of Thomas Hill, D.D., entered Emmanuel College in 1629, but did not graduate; accompanied his father to Boston and was admitted to the First Church before October 11, 1632, as established by the records of that church. Probably he returned to England before the fall of 1634, and was a student under Dr. John Clerk (written also Clarke) of London (1582-1653) president of the College of Physicians, 1645-1649, for in a letter written by a Mr. Robert Harmer concerning a religious controversy, about the year 1645 we find this: "Quaereries put to some independents of C. (Colchester) upon an occasion of a sermon preached by Mr. F. (Firmin), an independent apothecary physician, sometime servant to Dr. Cl. (Clerk) of London." In "The Real Christian," a popular book published by Firmin in England in 1670, and reprinted several times, he says that when his father died in the fall of 1634 he was "far distant," meaning probably that he was at his studies in England. It is likely that his father's death terminated those studies for he says in his "A Serious Question Stated," a pamphlet: "Being broken from my study in the prime of my years, from eighteen years of age to twenty-eight, and what time I could get in them years I spent in the study and practise of physic in that wilderness till these times changed, and then I changed my studies to divinity."

Firmin was in Boston in March, 1637-8, as he mentions being present when Mrs. Hutchinson was excommunicated on the twenty-second of that month (Separation Examined, page 120). His name first appears in the records of the town of Ipswich, January 4, 1638-9, when he was granted by the freemen of that town, one hundred acres of land on condition that he would live there for three years. The town had been settled only five years and the number of inhabitants was small, for the town records tell us that in the first nineteen years, 1633 to 1652, the total number of male inhabitants over twenty years of age was 332. Therefore we are not suprised to learn by a letter to Governor Winthrop, under date of October 10, 1639, that Firmin asked permission to settle in another township and to sell his land. He says: "I am strongly sette upon to study divinitie, my studyes else must be lost; for physick is but a meene help." The apostle John Eliot says of him, writing September 24, 1647: "We never had but one anatomy in the country, which Mr. Giles Firmin, now in England, did make and read upon very well." As Dr. O. W. Holmes points out, Firmin may be regarded as the earliest lecturer on anatomy in the country.

Sometime before December 26, 1639, Dr. Firmin married Susan, daughter of the Rev. Nathaniel Ward, an English barrister and for three years minister of Ipswich, author of "The Body of Liberties," a codification of the laws of the Colony, and of a satirical tract called "The Simple Cobbler of Aggawam," an early name of Ipswich. Firmin speaks of having had three of his children baptized by ministers who never looked at him as a member of their church (Sober Reply to Mr. Cawdrey, page 20). The father-in-law was very poor, resigned his pastorate and was anxious to return to England, as is shown by his letters to Governor Winthrop. Dr. Firmin sailed in the fall of 1644, leaving his wife and children to follow with her father in 1646. He was shipwrecked off the coast of Spain, but reached England in the following year for he preached in Colchester, July 30, 1645. There he was attacked for his independent views. He preached

whenever the opportunity offered, engaged in theological controversies, and wrote many pamphlets. He moved to Shalford in 1646, was joined by his family and was ordained by the Presbyterians when thirty-six years old as minister of the church, only to be turned out with others of his brethren in 1662 when the Act of Uniformity went into operation, thereby losing his living and becoming a "Dissenter."

In 1672, on the Declaration of Indulgence, he set up a meeting at Ridgwell and there he continued until his death in April, 1697. During the ten years from 1662 to 1672 Dr. Firmin supported his family by the practice of medicine; apparently it was now more than a "meene help," for by the Five Mile Act of 1665 dissenters were prohibited from coming within five miles of any incorporated town, or of any place where they had been settled as ministers.

Calamy (Calamy's Baxter, page 244) says of Firmin: "He practised physic for many years, and yet was still a constant and laborious preacher, both on the Lord's days and week days too. . . He had one considerable advantage above his brethren, which was the favour and respect which the neighboring gentry and the Justices of the Peace had for him, on account of their using him as a physician. . . The poor applying themselves to him, had often both advice and physic too for nothing; and of those who were more able, he took but very moderate fees; whereby he lost the opportunity of getting an estate, which had been a very easy thing."

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Walter L. Burrage, M.D.

Book Reviews.

The Future of the Disabled Soldier. By C. W. Hutt, M.A., M.S., P.H.S. New York: William Wood and Co. 1917.

The problem of dealing with our disabled soldiers and sailors is discussed in this volume. The arrangements for treatment and the methods adopted for the restoration of the health and industrial efficiency of the disabled, and the methods available for finding employment, are presented. A description is given of the measures adopted abroad—in France, Germany, Canada, Australia, New Zealand and the United Kingdom. Various industries are discussed with regard to their adaptability to physical defects. The appendices deal with facilities for special treatment, occupations suitable for defectives, the number of males employed in various occupations in England and Wales, training classes for the disabled, the degree of incapacity caused by injury and their corresponding pensions, the training of the disabled soldier and sailor in Lancashire and the the veterans' club.

Long Heads and Round Heads. By W. S. Sadler. Chicago: A. C. McClurg and Co. 1918.

"Long Heads and Round Heads" is an ethnic study of the German people, and an attempt to answer from the anthropological point of view the question: "What's the matter with Germany?" The book reviews briefly the history of European civilization; it describes the Heidleberg man, the Neanderthal and the Cro-Magnon man. The author believes that the battleground all through the ages has been Western Europe, where geography has enforced contact with Western migration. Race competition between "long heads" and "round heads" and the characteristics of the three great European races—the Nordic, Mediterranean and Alpine—are discussed with an insight which makes it possible to apply history to modern times and to the future. Germany's present reversion to barbarism is explained as a result of persistent racial substitution; the inferior round-headed Alpine stock in Southern Germany has been crowding steadily northward for two or three hundred years, and has numerically overwhelmed the higher Nordic type which originally constituted the German race. The Thirty Years' War and the Revolution of 1848 are partly responsible for this condition. The author gives a warning to the American people in his discussion of the "melting pot," and maintains that race rather than democratic institutions, is still the determining factor. The book contains, furthermore, a description of the German educational system, the Kaiser's dream of world power, Prussia's contempt for military law, her doctrine "might is right," and an explanation of the German "Superman" as "Supermania." Germany is considered a menace to civilization, and twenty-five reasons are given why we should win the war.

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INFLUENZA IN BOSTON AND VICINITY.

A RECRUDESCENCE of the epidemic of influenza and pneumonia has been observed in various localities during the past fortnight. Forty-seven new cases of influenza and six deaths, and five deaths from pneumonia have been reported in Boston recently. The health authorities believe that the new cases were caused by congestion in elevated trains. Fifty members of the Harvard S. A. T. C. are under close observation, although only three or four cases show actual symptoms of the disease.

It was reported at the Northeastern Department Medical Headquarters recently that the disease had broken out again among the United States Guards Battalion of the Springfield Armory, thirty-nine cases being under treatment. Seven sailors were taken from one of the patrol boats which arrived at Charlestown Navy Yard a few days ago and were sent to the Naval Hospital, Chelsea.

In Brockton, one hundred and twenty-one new cases have been reported. In Lawrence, it has been estimated that the deaths from influenza have exceeded by more than three hundred the city's war toll. Deaths from September 26 to November 21 have reached four hundred and fifty-five. Many new cases are being reported.

An investigation of the causes and spread of the disease has begun at Gallups Island. Nearly one hundred volunteers from the naval forces, including some members of the medical staff will be used. The United States Public Health-Navy Hospital at Quarantine, Gallups Island, is being used for the work. It was at first intended to make the tests at Bumkin Island Hospital, but as there are more than one thousand sailors in training there, it was thought best to change to Gallups Island. There the experimental squad can be completely isolated, there will be no danger of complications by contact with other persons, and there will be no danger of a spread of the disease beyond those engaged in the work.

Capt. John M. Edgar, medical director for this Naval district, is in command of the entire work, with Lieut.-Commander Milton J. Rosenau, in charge of the local research work for the navy.

The volunteers will be exposed to the influenza bacillus by contact and by having it placed directly in their nostrils or throat and in every other possible manner. Some groups will be innoculated with bacterial vaccine to observe the effect as compared with noninoculated groups under identical conditions.

The outcome of these experiments will be awaited with great interest.

CHILD CONSERVATION.

DURING the last year, the nation has been thoroughly awakened to the importance of child conservation. The work accomplished in Massachusetts by the Committee on Child Conservation is reviewed in the September and October issues of the *Commonhealth*. A survey including an exhaustive study of the mortality and morbidity statistics of children under the age of five years has been made of every city, town, and village in the State. The three factors which have been considered most important in child conservation are pregnancy care, obstetric

care, and infant feeding; efforts have been made to provide competent, continuous medical care for that part of society which it has not been able to reach otherwise.

For many years, there have been excellent agencies engaged in baby welfare work, but these agencies have been located for the most part in the larger cities and towns. Similar agencies have been established in localities where little work was being done. Far-reaching plans have been made in order that every prospective mother may be guarded from the beginning of her pregnancy till the birth of her baby, and so that the baby may be supervised during the early period of life. This program included the creation of pregnancy clinics; free hospital beds have been provided where pregnant women may have competent obstetric care; milk stations and well-baby clinics have been established where the baby may be protected from infancy to sturdy youth.

In order to carry out this program efficiently, a public health nurse was appointed for each health district in the State and an additional nurse was assigned to Boston.

These nurses were selected with the greatest care, and all of them had had not only public health training but a considerable amount of experience in actual public health field work for children. Whatever success has been attained has been due in no small measure to the efficiency of these nurses. They have brought to the committee great enthusiasm and devotion, as well as intelligent and constructive suggestions.

In making the surveys the nurses have visited the representatives of the boards of health, the child welfare agencies, the visiting nursing associations and other private or church organizations which were doing child welfare work. They have received also information by personal investigation concerning the actual work being done by these organizations. From these facts the nurses have made to the committee certain suggestions for development of the work which seemed to them desirable in that particular community.

The committee has tried to stimulate local publicity both for the raising of funds to carry on the work and for the awakening of interest in the importance of child conservation. This has been done by letters and by distribution of literature; also many public meetings have been arranged where talks have been given by several members of the committee.

At the beginning of the work the committee planned to include all parts of the child conservation work, *i.e.*, infant care, school hygiene, juvenile delinquency, child labor, day nurseries, etc. It was impossible to cover this entire field adequately, and so it was decided for the first year to consider only the care of the child up to school age. The usual procedure has been departed from in many instances where the other problems were closely linked up with this portion of the work.

A summary of this year's work shows that 65 committee meetings and 11 supervisors' meetings have been held. Three hundred and twenty talks have been given. The number of persons reached is estimated at 18,406. $53,930 have been spent in this work. Thirty-one nurses and two dietitians have been employed. Thirty child-welfare stations, two sick-baby clinics, and eight pregnancy clinics have been opened.

In addition to the review of the work done by the Committee on Child Conservation, this bulletin includes several articles dealing with obstetrics, infant feeding, and mental hygiene.

THE VENTILATION AND HEATING OF SCHOOLHOUSES.

At a public hearing held at the State House, June 11, 1918, the appointment of a special committee by the Chief of the District Police, for the purpose of studying the problem of the ventilation and heating of schoolhouses, was urged.

This committee has been appointed and consists of a representative from the District Police, one from the State Board of Education, one from the State Department of Health, an architect, and a heating and ventilating engineer. The committee has held several meetings and realizes that the subject is one of great magnitude, involving the health and comfort of thousands of school children and school teachers. It is of vital interest to every citizen whose children are being educated in our public and private schools; to every city or town or corporation maintaining public or private schools; to school and health officials who educate and care for the health of pupils; to engineers, architects, and builders, who design and erect our school buildings; and especially to the public who pro-

vide funds for the erection and maintenance of schools.

The committee proposes to hold meetings at the State House, Boston, in order to gather all the information possible on both sides of the question. The first hearing will be in Room 446, State House, December 14, 1918, at 10.30 a.m. A second hearing will be held December 16, 1918. All physicians interested are urged to come.

MEDICAL NOTES.

JOHNS HOPKINS UNIVERSITY.—The recent influenza epidemic and its relation to pneumonia were discussed by the National Academy of Science at its closing session at Johns Hopkins University on November 19. Professor William J. MacCallum of Johns Hopkins, Professor Wolbach of Harvard Medical School, and Colonel Victor C. Vaughan of the Surgeon-General's office at Washington took part in the discussion, which was devoted chiefly to Pfeiffer's bacillus. discovered in the influenza epidemic of 1892.

Colonel Vaughan presented a paper on the distribution of diseases, and dwelt particularly on measles and pneumonia at army cantonments. He found out last winter and spring that there was a greater susceptibility to these diseases among Southern men than among those from the North; among men from the rural districts than among those from the cities.

He ascertained that people from the country cannot stand "herding" together, so that the strong farmer boy is more likely to contract measles or pneumonia than the department store clerk, despite the fact that the farmer boy is very likely to be the stronger of the two.

HENRY PHIPPS INSTITUTE.—The fourteenth report of the Henry Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis describes various phases of research work carried on by the Institute. An article dealing with "Dietary Habits and Their Improvement" discusses the conditions which lead to tuberculosis among the laboring classes. A study of Italian, Negro, Russian, Jewish, and Polish families disclosed the fact that the dispensary patient gets about four-fifths of the amount of food that he should. This continuous subnormal amount lowers his resistance, and if there is any additional strain put upon him, he readily falls the victim of disease. Among children it has been found that those designated as tuberculous or pretuberculous have made amazing gains in weight with proper nourishment. It is essential to teach people the quantity and quality of food desirable and the relative values of different foods.

A study of "Pregnancy and Pulmonary Tuberculosis" shows that the combination of pregnancy and pulmonary tuberculosis is a frequent one. Pulmonary tuberculosis exerts little or no influence against conception and but little influence on the course of pregnancy; and except in the advanced stages, it exerts little or no influence toward causing abortion, miscarriage, or premature labor. A review of eighty cases from the Henry Phipps Institute shows that 5 were improved by pregnancy; in 69 cases there was no change, 2 became worse, 2 deaths occurred, in 3 cases pregnancy was interrupted, premature labor was induced in 2 instances, there were 4 miscarriages, and 63 infants were born alive, 13 dead, and 1 stillborn.

Other articles presented consider, "The Abiotic Action of Ultra-Violet Light," "Bactericidal Fluorescence Excited by X-rays," "Note on a Wet Condenser Suitable for Continuous High Potential Service," "On the Electrolytic Diazotation of an Aliphatic Compound," "Dichloramine-T. and Chlorinated Eucalyptol 1.2.," "The Preparation of Halogen Derivatives of Catechol, Homo-Catechol, and Pyrogallol Methyl Ethers and Sulfonic Acids," "Notes on the Use of Large Glass-stoppered Containers in Autoclaving," and Parafuchsin as a Stain for Tubercle Bacilli."

WAR NOTES.

WOUNDED SOLDIERS LANDED AT NEW YORK.—A transport from France landed 426 wounded and convalescent American soldiers and 24 officers at Hoboken on November 23. The men were taken in Red Cross ambulances to the new army hospital at Eighteenth street and Sixth avenue. These American fighters were that hospital's first patients, as it was opened on that day for their reception. The staff consisted of 400 enlisted men, 45 physicians, and about 70 regular army nurses, headed by Surgeon-Major W. J. Monaghan of the Medical Corps.

MAJOR-GENERAL GORGAS RETIRES.—Major-General William G. Gorgas, former surgeon-general of the Army, will retire on December 1. Although he reached the age of retirement several weeks ago, General Gorgas was recalled to active duty to make a special investigation into matters pertaining to the health of the Army, and his report has been given to Secretary Baker.

ARMY WILL TRAIN MORE NURSES.—The Army School of Nursing will continue to accept applications from young women who desire to train as nurses. Additional student nurses will be needed for several months at army hospitals, camps and cantonments. The present reserve of 3,000 student nurses is steadily being reduced, the greater proportion being assigned to army hospitals receiving sick and wounded now being returned from overseas.

ARMY SURGEONS ASSIGNED.—The following doctors who have been in training at Camp Custer, Battle Creek, Michigan, have received assignments to replace Coast Artillery surgeons who have gone overseas with Heavy Artillery regiments:

Captain Jacob Clerk and Lieutenant Arthur M. Crandall, to Fort Adams, Newport; Captain Howard G. Nunisberger and Lieutenant Howard D. Eaton, to Fort Williams, Portland; Captain Elmer H. Jones and Lieutenant Charles W. Lonenecker, to Fort Andrews, Boston; Captain Thomas Lucast to Fort Revere, Hull; Captain Hubert A. Mount, to Fort Strong, Boston; Lieutenant Vinton G. Black, to Fort Warren, Boston; Lieutenant Oliver P. McCartney and Jesse M. Mecum, to Fort Banks, Winthrop; Lieutenant Charles A. Orr, to Fort Rodman, New Bedford.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending Nov. 23, 1918, the number of deaths reported was 257 against 216 last year, with a rate of 17.09 against 14.58 last year. There were 43 deaths under one year of age against 33 last year.

The number of cases of principal reportable diseases were: Diphtheria, 39; scarlet fever, 17; measles, 4; whooping cough, 4; tuberculosis, 59.

Included in the above were the following cases of non-residents: Diphtheria, 5; scarlet fever, 2; tuberculosis, 2.

Total deaths from these diseases were: Diphtheria, 1; whooping cough, 1; tuberculosis, 21.

Included in the above were the following non-residents: Tuberculosis, 1.

THE TRAINING SCHOOL OF PSYCHIATRIC SOCIAL WORK AT SMITH COLLEGE.—In order to be of service to the Government in a time of unusual stress and to assist in salvaging the human wreckage of the war, a course in psychiatric social work was offered at Smith College last spring. Between sixty and seventy students, varying in age from girls just out of college to experienced social workers, were selected on the evidence of previous training and general fitness. The course was instituted at the proposal of the National Committee for Mental Hygiene, and was established with the assistance of the Boston Psychopathic Hospital.

It was not the intention of the training school to give to its students a complete course in psychiatry or to prepare them to diagnose or treat on their own responsibility the types of cases which were studied during the course. Its purpose was rather to teach the fundamental principles of human behavior both normal and abnormal, social and antisocial. With this end in view, the courses in psychology, sociology and social psychiatry all aimed to show the adjustment which is necessary if man's primitive instincts and desires are to find adequate and constructive outlet in the environment which modern civilization offers. The course in social psychiatry endeavored to show to what degree abnormal and antisocial behavior results from the inability to make such adjustment. Only those mental conditions were studied which have been found to be related to the war neuroses and psychoses.

The physicians who planned the course realized the responsibility of attempting in a period of eight weeks' time to teach a group of lay workers, without previous medical training, representing a wide range of ages, with a variety of educational backgrounds and various degrees of maturity, the principles of mental disease, in as thorough a manner as it might be done in our best medical schools. However, when all things were weighed in the balance, it was felt that the time of a world war and the need which was already being felt in our country

as well as in others for trained workers of this type to assist in the reconstruction of returned soldiers were sufficient reasons to justify a method of procedure which in other times and under less pressing needs might be considered a risk.

The first eight weeks of the course were devoted almost entirely to the theoretical side of the problem; the practical work is to be gained during the following six months. The ultimate success of the course, however, depends largely on the further coöperation of the psychiatrists in recognizing the ability of these specially trained workers, in giving them sufficient scope in exercising their ingenuity and in helping them to apply the knowledge that they will have acquired during their eight months of training. Above all, it is to be hoped that these social workers and others to be trained later in similar courses will be of invaluable assistance in the field of mental hygiene, which has even greater possibilities than that of the very imperative but more limited field of the reconstruction of the soldiers who will suffer from the war neuroses.

NEW ENGLAND NOTES.

SCHOOLS CLOSED IN JAMESTOWN, R. I.—The public schools in Jamestown, R. I., were closed on November 19 for the remainder of the week because of the renewed outbreak of influenza. Thirty cases were reported. The town has not been entirely free from the disease since the epidemic in September.

Miscellany.

RECENT DRUG PRICES.

REPORT from New York on October 15 notes a further rise in the cost of various essential drugs, chiefly due to the influenza epidemic and to large government contracts, notably aspirin, phenacetin, and quinine. Jobbers, wholesalers and manufacturers were jammed with the greatest deluge of orders for influenza and "grippe" combating drugs that has ever been seen here. There was a tremendous carry over of business over the holiday, and in order to meet it many of the local jobbers were forced to suspend all deliveries over the counter, accepting only orders in their turn. New high price levels were established on the market leaders. Sales of camphor were noted at steadily advancing prices. Early in the day there were transactions at $3; later on at $3.25; then at $3.50, and finally $3.75 and $4 a pound was quoted with offers exceptionally difficult to locate at any price.

A big business was closed October 14 in acetyl-salicylic acid or aspirin at $2.50, and at the close of business quite a number of holders were reported to be asking as high as $3 a pound. London advices said that heavy demand had put aspirin up to 16s per pound, net, with the present cost of manufacture hardly justifying makers in selling below 15s for forward delivery.

Quinine continued in active demand with the domestic quoted at $1 an ounce and the Java at 88 cents. It is expected that the latter will take a sharp curve upwards because more than 150,000 ounces of it have been taken out of the market in the past two or three days. In London up to 4s 3d is asked for quinine sulphate.

Assafoetida was inquired for in extraordinarily heavy volume, principally from Baltimore and other points in the Southeast. Sales were effected at $2 to $2.15 a pound for the whole, with powdered selling at $2.15@$2.25 a pound. The large demand from the South is the result of the introduction of this article to the colored population as a preventive.

In addition to the commodities enumerated above, antipyrene, and acetphenetidin continue to be taken in large volume for the influenza. Offers of menthol continued to reach the market at $5.75@$6 a pound, although the activity was not so pronounced in the latter item. Benzoate of soda ruled firm at $2.90@$3 as to holder, while permanganate of potash was steady at $1.75@$2, with offers of 1000 pounds at this figure.

Sales of citric acid went through in the trade at $1 a pound. Makers report a run on citric and are consequently allocating orders. Apparently the druggists are in need of citric acid for use in preparing citrate of magnesia. There has not been any revision of prices for iron and quinine citrate as yet, but it is expected that prices will be revised upwards. Other citrates are meeting with a good demand.

The past few days have constituted an epoch-making period in all quarters of the wholesale drug and chemical market. Growing strength throughout the various groups of drugs has attested to the unusually heavy demands. The Government has reëntered the market for huge quantities of drugs and chemicals, calling for bids to be opened on 119 separate items on Oct. 18. Every item on the list, from acetanilid to xylol, inclusive of all the various intermediates, as well as crude drugs, laxatives, narcotics, antipyretics, etc., have been in demand and the price trend has been steadily higher.

Pharmaceuticals necessary for checking influenza have all been in active demand and have attained new record price levels. This in-

cludes camphor, quinine, citric acid, the citrates, aspirin, laxative bromo-quinine, acetphenetidin, antipyrene and menthol. In addition to the very sharp advances which have been named in the above, it is felt in the drug trade that before long substantial advances will occur in boric acid, ammonia muriate, nitrate of silver, petrolatum, soda-bromide, aromatic spirits of ammonia and iodide of potash.

In the latter part of September domestic refiners of camphor announced a jump of 10 cents a pound in their schedule, establishing the market on the basis of $1.34½ a pound bulk in barrels; $1.35 for cases of 100 blocks; and proportionate advances of all other sizes. Owing to urgent inquiries and lack of supplies second hands advanced the price to $1.75@$2. Immediately the seriousness of the epidemic was manifest the market was besieged with more orders than it could take care of. In a very brief time, the spot price had jumped to $3 among second hands, and then it became evident that nothing was available in small sizes and that offers of 2½-pound slabs were also extremely limited.

Very bullish reports have been received from Japan during the past few weeks about the position of menthol. Cablegrams from Japan tell of an advance to a basis of $5.30 a pound in bond, equivalent to $5.80 a pound duty paid.

Quinine has been more or less excited as the result of the heavy orders placed by the Government and the heavy demand which developed from the civilian trade where it was principally utilized for combating the grip epidemic. Domestic manufacturers have not altered their quotations, maintaining prices at 90 cents an ounce in 100-ounce lots, at which price considerable of the demand was supplied. Towards the middle of October great difficulty was encountered by the manufacturers in taking care of the demand. As a result, second hands began getting the business and heavy sales were put through at 95 cents for domestic and up to as high as $1 and $1.05 an ounce was quoted.

Citric acid was one of the strong and active features in the general list of pharmaceutical drug products. The abnormal demand was coincident with the news of the sinking of the Italian steamship *Alberta Treves* with a cargo estimated at not less than 1,000,000 pounds of citrate of lime. As the result of the great loss of crude material for citric acid production, the manufacturers of citric acid announced a flat advance of 10 cents a pound, establishing the market at 92 cents for crystals and 92½ cents for the powdered, with the usual premium of ½ cent a pound asked in kegs. There was an advance among second hands to a level of 97 cents for citric acid.

The steamer *Alberta Treves* carried in addition to citrate of lime, a large cargo of Sicilian essences, and following her sinking there was a marked upward movement in the essential oil of bergamot, which hit $9 a pound in some circles. Lemon oil also was a very strong item on the general list of essential oils, with dealers quoting it at $1.45 and $1.50 a pound as to brand.

Acetyl-salicylic acid or aspirin has been one of the products in which trading has been decidedly active. An order for 35,000 pounds of this material was awarded by the Government on Oct. 13, which accounted for a large portion of the production. With the spread of the influenza epidemic the demand for aspirin became broader than at any time in recent years, with the result that spot prices crossed $2.25 and $2.50 a pound. Production at present seems to be heavily taxed despite the large increase in the number of domestic, as well as Canadian and other foreign makers.

All of the various ammonia products have come in for a great deal of attention during the past few weeks. There is a great shortage of sal ammoniac, and prices for the U. S. P. article have gone up to 30 cents in some quarters of the trade, with commercial white and gray sal ammoniac now held at 25 cents a pound. The Government has taken control of the various ammonias, especially sal ammoniac, and stock available for the civilian trade have consequently been cut to small proportions. Sal ammoniac lump and genuine crystals, which are manufactured in England, is now nearly exhausted in this market, and a level of $2.25 @$2.50 has been attained here. There are reports that a domestic substitute is being offered at about 75c@$1 a pound, but this has not been found adaptable to necessary requirements of the trade.

Glycerine recorded a further net decline amounting to 3 cents a pound on the chemically pure grades in accordance with the agreement between domestic soap manufacturers and the United States Government to supply the Allies with dynamite for the next six months at fixed prices. New offerings of the chemically pure grades are coming out at 57 cents a pound in drums while the dynamite grade is being quoted at 58 and 58½ cents; the crude saponification at 38 cents, and the soap lye crude at 35 cents a pound. The decline in prices is automatic and is expected to continue for the period of the international agreement.

CANADIAN ARMY MEDICAL CORPS.

THE Bulletin of the Canadian Army Medical Corps, Volume 1, Number 3, for June, 1918, contains an article giving the results of a combined inquiry into the presence of diphtheria and diphtheroid bacilli in open wounds. The following conclusions were reached:

(1) Morphologically and, in the early stages, culturally, diphtheroid bacilli from wounds are many of them, indistinguishable from *B. diphtheria*.

(2) Harmless, non-toxic bacilli may be present in wounds affording cultures possessing the same sugar formula as regards dextrose, lactose, saccharose and dextrine, as does the true virulent Klebs-Loeffler bacillus.

(3) It is not justifiable, therefore, to make a diagnosis of diphtherial infection of wounds, either from smears alone or from stained preparations and cultured characteristics. The demonstration that the bacilli produce toxins —ectotoxins—*i.e.*, the result of innoculation of broth cultures, is alone capable of proving the presence of infection by the true virulent *B. diphtheria*.

(4) By the staining, cultural and fermentation tests, four cases of apparent diphtheria infection have been detected in a careful bacteriological study of 306 cases of open wounds. By the decisive test of innoculation these are reduced to two.

(5) There is a large body of evidence showing that even isolated cases of diphtheria infection of wounds are distinctly uncommon among the wounded overseas, and complete absence of any evidence in Great Britain that these isolated cases have acted as foci for the spread of the infection to other wounded men. No evidence of a widespread infection of open wounds by diphtheria bacilli has been discovered in Canada hospitals overseas in Great Britain.

(6) Diphtheroid bacilli of various orders, while not common, are, as might be expected, more frequent in open wounds. There is no evidence that these have exerted deleterious effects.

(7) There is a certain amount of evidence that particular species of diphtheroid bacilli characterize particular hospitals.

A report on an investigation of the after-effect of wounds of the chest and their treatment presents the following conclusions:

(1) Deformity of the chest wall is a very important disabling after-effect of gunshot wounds of the chest.

(2) This deformity follows most frequently prolonged involvement of the pleural cavity.

(3) The early and persistent evacuation of fluid from the pleural cavity, either by aspiration or by operation, is of great importance in preventing the development of the deformity Especially is this so in cases of haemothorax.

(4) The early use of special exercise is beneficial in preventing or overcoming this deformity.

(5) The prognosis in this condition is exceptionally good under suitable treatment.

It was concluded in a report on the examination of the sputum for albumin in pulmonary tuberculosis and chronic bronchitis that:

(1) In chronic bronchitis the albumin test is invariably negative.

(2) In cases of suspected tuberculosis without definite signs about 87 per cent. give a positive reaction, and *probably* 60 per cent. of these show the organism within two or three months.

(3) In cases of clinical tuberculosis 79 per cent. will show albumin if the sputum be taken during an elevation of temperature, but albumin is nearly always absent from sputum collected when the temperature and pulse are normal or subnormal.

(4) In about 98 per cent. of cases of proven tuberculosis, the albumin test is positive at some period in the course of the disease.

(5) In examining sputum for albumin, whether the case be one of suspected, clinical, or proven tuberculosis, a negative result gives no information unless the sputum be taken over a period of time on successive days and during a rise of temperature. In other words, choose a febrile period for taking the sputum, as albumin will be present then if ever.

The Bulletin contains, also, articles on "Chronic Hypertrophic Pulmonary Osteo-Arthropathy following Bronchiectasis" and "Delayed Tetanus." An account is given of the regular meeting of the Etchinghill Clinical Society, in which the treatment of chronic gonorrhoea was discussed. The Bulletin contains, also, administrative notes and corps news.